REMARKS

Claims 1 and 3-19 are pending in the present application. The Examiner has rejected claims 1 and 3-19 under 35 U.S.C. §103. Applicant has amended claims 17-19 to correct claim numbering. No new matter is introduced,

Section 103 Rejections of Claims 1, 14, and 15

Claims 1-11, 14-15, and 17-19 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,219,045 (Leahy, *et al.*) in view of U.S. Patent No. 5,917,944 (Wakisaka, *et al.*).

Applicant urges that independent claims 1, 14, and 15 are not *prima facie* obvious over Leahy and Wakisaka for at least the reasons presented herein below.

At the very least, the combination of Leahy and Wakisaka does not disclose or suggest a virtual environment system having, e.g., *an acoustic localizer adapted to determine the location of sound sources in a local environment, said acoustic localizing means comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space*, as essentially recited in claims 1, 14, and 15.

The Examiner cited Leahy as disclosing an *acoustic localizer adapted to determine the location of sound sources in a local environment*, as essentially recited in claims 1, 14, and 15.

Applicant respectfully disagrees with this interpretation of Leahy.

Leahy is directed to a network architecture for a chat room. Leahy's system includes one or more client systems through which each user interacts, and each client system includes a GUI that displays a visual representation of the chat room, including avatars representing at least some of the participants to a given user. Leahy's client systems are desktop computers, terminals, dedicated game controllers workstations, or similar devices with graphical displays and use input devices. The section of Leahy cited

6

by the Examiner discloses a chat processor that can send and receive messages containing conversation. These messages can contain text and/or audio, and a user can select those avatars to whom a message should be distributed. However, there is no disclosure in the section of Leahy cited by the Examiner of an acoustic localizer that can determine the location of a sound source in a local environment. Thus, Applicant urges that Leahy does not disclose or suggest *an acoustic localizer adapted to determine the location of sound sources in a local environment,* as essentially recited in claims 1, 14, and 15.

The Examiner concedes that Leahy does not disclose a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space, but then cites Wakisaka as disclosing directional microphones and multi-directional microphones.

Wakisaka is directed to, *inter alia*, a system for recognizing and translating voices. This system of Wakisaka includes a directional microphone for detecting a particular desired voice, such as an announcement in a public place, and a multi-directional microphone for collecting the overall ambient sound, such as surrounding conversations and noise. There is no limit to the number of microphones employed. Wakisaka's system also includes a unit for storing noise data recorded in advance of an announcement, a sound analysis unit for removing noise from a detected voice announcement, by analyzing the stored noise data, and units for extracting sound features from the voice announcement after removal of noise and for translating the sound features into another language. There is, however, no disclosure or suggestion in Wakisaka of detecting the location of a sound source, or of generating a voice translation that enables the listener to localize the sound source. Furthermore, there is no disclosure or suggestion in Wakisaka arranging the microphones *to span the three coordinate axes of a three dimensional space*, as essentially recited in claims 1, 14, and 15. Wakisaka's disclosure is directed to noise removal, sound feature extraction along with an acoustic model to facilitate the translation of the voice announcement, and the re-transmission of the translated announcement, not to localizing or detecting the position of a sound source. Since Wakisaka's system does not determine the location of a sound source, there is no need for disclosing or suggesting *a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space.* Thus, contrary to the Examiner's

allegation, <u>Wakisaka</u> does not rectify the deficiencies of <u>Leahy,</u> noted above

The Examiner stated that one skilled in the art of sound processing would recognize that the direction of sensitivity comprises a directional cone like volume. However, for the reasons presented above, this is neither taught nor suggested in <u>Wakisaka</u>, nor does recognizing this fact render obvious Applicant's claim recitation *an acoustic localizer adapted to determine the location of sound sources in a local environment, said acoustic localizing means comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space.*

For the reasons presented above, Applicant urges that <u>Leahy</u> and <u>Wakisaka</u> do not disclose or suggest all of the limitations of claims 1, 14, and 15, and thus claims 1, 14, and 15 are not *prima facie* obvious over <u>Leahy</u> and <u>Wakisaka.</u> Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 3-11 depend from claim 1, and claims 17-19 depend from claim 15, and are thus patentable for the same reasons as claims 1 and 15, respectively. Reconsideration and withdrawal of these rejections are respectfully requested.

Section 103 Rejections of Claims 12, 13, and 16

Claims 12-13 and 16 were rejected under 35 U.S.C. §103(a) as being obvious over <u>Leahy</u> and <u>Wakisaka</u>, and further in view of U.S. Patent No. 6,584,439 (Geilhufe, *et al.*).

Claims 12-13 depend from claim 1, and claim 16 depends form claim 15. Claim 12 is directed to an I/O device wherein "operations . . . are commanded by said user through voice commands. Claim 13 includes "a speech recognition module adapted to translate voice commands for said user . . .". Claim 16 is directed to a method wherein "said . . . I/O device . . . is controlled by . . . voice commands from said user . . .". The Action concedes that the combination of <u>Leahy</u> and <u>Wakisaka</u> do not teach voice commands, but then cites <u>Geilhufe</u> as teaching a GUI that uses voice commands to control input from a user. However, as discussed above, <u>Wakisaka</u> fails to teach or

suggest an *acoustic localizer adapted to determine the location of sound sources in a local environment, said acoustic localizing means comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space*, as essentially recited in independent claims 1 and 15, and Geilhufe does not correct these deficiencies. Applicant urges that a *prima facie* case of obviousness against dependent claims 12-13 and 16 cannot be maintained based on the combination of Leahy, Wakisaka and Geilhufe. Reconsideration and withdrawal of these section 103 rejections are respectfully requested.

CONCLUSION

Applicant urges that claims 1 and 3-19 are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

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10